

# *Romancing the Potato*

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THE TRANSFORMATION from hunter/gatherer to agrarian economies took place over the past twelve thousand years. This length of time is insignificant in terms of geological history—or, for that matter, in terms of human history that began with the appearance of *Homo sapiens* some four hundred thousand years ago, our genus, *Homo*, at two million years, and our family, Hominidae, six million years ago. Accompanying changes in the face of the land and lifestyle of the people was a concomitant alteration in perceptions of the agrarian participants. The game of comity of life and death, which the hunter/gatherers entered in the great savannas, accepting the nature of nature, was altered by agrarian thought: from a core process of chance to one of manipulation, from reading one's state of grace in terms of the success of the hunt to bartering for it, from finding to making, from sacrament received to negotiations with humanlike deities. The transformation took place slowly and for various reasons, but the result was to concentrate populations in certain areas and make them dependent on the products of domestication. Between about twelve thousand and eight thousand years ago this transformation in human culture took place in the eastern Mediterranean and Near East. We begin with small, semimobile groups living in what we would now call "wilderness," upon which their impact was small. Then, here and there, little patches of wheat grasses, intensified monitoring of some wild goats or sheep, and the hangdog shadows of scavenging wolves whose offspring were sometimes captured and tamed, all made little pockets of the first agriculture. The topography of ancient Mesopotamia, composed of arid lowlands, mountains, and aggrading streams whose gravel bars were the homes of annual plants in different altitudinal zones, had already resulted in different human economies. The details of the first agriculture are still being debated, but the outlines seem clear. Seminomadic hunter/gatherers in this part of the world had long since seen the last of the elephant, hippo, and rhino. Before twelve thousand years ago the elk, reindeer, horse, and great auroch were disappearing because of climatic changes. A trend in foraging was toward crabs, clams, turtles, fish, snails, waterfowl, and the cereal plants.

The first domestic plants and animals were wheat, barley, goats, sheep, and dogs. Humans have been around thirty-three times as long as the dog. Domesticated cattle are recorded at nine thousand years ago, and horses at six thousand. Almost any typical wild species for which there are fossils are hundreds of thousands of years old. From an evolutionary and geological perspective, the animals and plants that share our homes and our fields came into our lives only yesterday and exist because of the protective care we have given them.

Stones, the first tools of agriculture, originally used for grinding gathered seeds or ochre for body painting, became important implements for grinding harvested grains, and flint sickles were used for harvesting. Wild species diversity diminished. The seed heads of the grasses were selectively modified for storage and planting. Sheep, gazelle, and onager were driven and penned. Planting, storing, and keeping caprine animals and bovines spread from upper grassy slopes to intermontane plains and marshy areas. Irrigation made its appearance in the lowlands. Life was no better for humans than it had been, but the economy demanded more people to reshape production.

Domestication changed means of production, altered social relationships, and increased environmental destruction. From ecosystems at dynamic equilibrium ten thousand years ago the farmers created subsystems with pests and weeds by the time of the first walled towns five thousand years ago.<sup>1</sup> At least six millennia of mixed tending and foraging followed the earliest domestications, preceding the wheel, writing, sewers, and armies. In varying degrees primal foraging blended with early farming. Before cities, the world remained rich, fresh, and partly wild around the little gardens and goat pens. Extended family and small-scale life incorporating the rhythms of the world made this "hamlet society" humane and ecological. Village horticulture, relatively free of commerce and outside control, may have been an ideal life.

Keeping the hoofed animals out of the seed patches and guarding stored food reduced human mobility. The trampling of human feet and hooves around home sites, the progressive use of local wood for fuel and construction, and the accumulation of implements too bulky to carry were among the first material signs of hamlet life and domestication.

Fleas, tapeworms, and other parasites were acquired from, and shared with, kept animals. Modification of the surrounding plants into "pioneer" or weed communities simplified and destabilized the environment. As the techniques for storing and corralling became part of the cultural skills, cattle and vegetables were added. Fences made their appearance, and domestic plants and animals created a new company of altered forms.

Wild things retreated into the distance, and the mix of garden, pasture, dwellings, weeds, kept animals, lice, cockroaches, bedbugs, house mice, rats, and other inhabitants of simplified communities filled the phenomenal

and economic world. With irrigation, cultivation, and the rest of the routine round of obligatory labor, the human environment probably seemed in any one lifetime inevitable and unchanged. The ancient human acceptance and affirmation of a generous and gifting world was replaced by dreams of plenty in circumstances that made their fulfillment possible only in boom years. Domestication would create a catastrophic biology of nutritional deficiencies, alternating feast and famine, health and epidemic, peace and social conflict, all set in millennial rhythms of slowly collapsing ecosystems.

The complexity of social problems associated with domestication are difficult to understand but may have been due to sedentism. Was it because they quit being nomadic that primitive peoples became subject to scarcity and greed for things? There seems to be little doubt that political complexity increased with sedentism, but was that the result of power struggles over resources or the subtle effect of the proximity of one's neighbors, of being fenced in? Perhaps the containment and the struggles for property and power cannot be disentangled. The potlatch people, sedentary fishermen, have the same troubles of power and influence that beset planters. Social conflict and competition arise in both cases, implying that sedentism is indeed at the heart of the problem. Genetically the process of domestication is no different than adaptive change among wild species, a parallel which Charles Darwin intuitively recognized and which accounts for his interest in domestic pigeons and other farm animals. It takes only about fifty generations to alter a group of animals to the extent that it can be distinguished from its wild cousins.

The production of new breeds and varieties of cats and dogs by humans demonstrates how rapidly "evolutionary" change can occur when directed by human selection. The crucial factor in the keeping of animals that results in their biological alteration and renders them unfit to live in the wild is not simply captivity. Their genetic makeup is not altered by confinement. It is *breeding* in captivity that changes their genetic constitution. Selection of animals for visible "desirable" traits (size in dogs, milk in cows, wool in sheep) may make them unfit in other unseen ways (smaller brains, bone and skeletal problems, abnormal development, etc.). There is a selfculling in inbreeding, as some die or will not reproduce in captivity, but this does not offset undesirable traits that may be passed on.

Wild ecosystems have a higher diversity index (number of species per number of individuals), more niches, greater stability, higher net primary productivity (with less effect on the whole by the removal of a single species), higher structural and functional complexity, and greater population stability than cultivated systems.<sup>3</sup> The consequences for the captive and domesticated animals were reduction in size, piebald color, shorter faces with smaller and fewer teeth, diminished horns, weak muscle ridges, and less genetic variability.<sup>4</sup> Poor joint definition, late fusion of the limb bone epiphyses with the diaphyses, hair changes, greater fat accumulation, smaller brains, simplified behavior patterns, extended immaturity, and more pathology are a few of the defects of domestic animals. All of these changes have been documented in direct observations of the rat in the nineteenth century and by archaeological evidence and animal breeders in the twentieth century.<sup>5</sup>

The total number of species domesticated is minuscule compared to the number of wild forms. But weedy, wild forms, incidental parasites, and other plant, insect, arthropod, and rodent fellow travelers accompanied the domestic organisms and became interlocked with them as agriculture spread. An association of plants and animals emerged together with the human social and technological accoutrements of agriculture. As this human-dominated association replaced wild communities, drastic alterations were wrought in the microbial flora and invertebrates of the soil and water. So long as there were relicts of the wild habitats, the smaller, unobtrusive wild forms survived at the fringes or in the wild places between human settlements, while the larger mammals and birds tended to be excluded as competitors or were overhunted. But as people began to till the earth, other species were categorized as the enemy.

THE TRANSITION from the hunter/gatherer to the agrarian way of life took various paths, depending on circumstances, but in all cases it brought about similar changes in lifestyle and worldview. Although hunter/gatherers who had become more sedentary did begin some minor forms of cultivation, neither tribal histories nor the archaeology of hunting/gathering peoples shows that they readily embraced farming and herding. Instead, invaded for their land by both pastoralists and farmers, they were conquered. The small remaining subsistence or "Neolithic" gardeners or horticulturists today retain some of the old hunting/gathering ways, keeping traditions of sharing, the men seeing themselves as "hunters" even though slowly corrupted by a "warrior" concept. Many farmers and their city counterparts, having been conquered or displaced, are themselves refugees from better times. As though in some disastrous contract with the devil, they traded their social freedom for authoritarian regimes, the illusion of control in barren natural environments, and slavery in the garb of security.

The invasion of the homelands of hunter/gatherers is described in James Woodburn's description of the Haida, in Richard Borshay Lee and Marjorie Shostak's work on the !Kung San, and in heavily documented descriptions of

American Indian hunter/gatherers by their agricultural neighbors and Europeans.<sup>6</sup> These invasions have occurred over millennia against primal people with no warrior tradition, no idea of an organized army, and no psychology of defense. War and warriorhood probably grew out of the territorialism inherent in agriculture and its exclusionary attitudes and the necessity for expansion because of the decline of field fertility and the frictions and competitions of increased human density.

With the rise of “archaic high civilizations,” pathologies related to group stresses and the specter of scarcity in monocultures (grains, goats) meant, for all but a tiny elite, the loss of personal autonomy in the pyramiding power of conquest and the struggle for wealth. When we compare the different economies of the past, we find the most striking features have to do with differences in the effects of ecology on the personality, especially compliance and obedience as distinct from self-reliance and independence. John Berry and Robert Annis studied differences in six northern Native American tribes and found “a broad ecological dimension running from agricultural and pastoral interactions with the environment through to hunting and gathering interactions.”

Corresponding psychological and practical differences were found between hunter/gatherers and planters who stored grains and roots or animal keepers with their tons of flesh on the hoof. Among the six tribes, agriculture was associated with high food accumulation, increased population density, and intensified social stratification.

Hunter/gatherers were low food accumulators with a high sense of personal identity, social independence, emphasis on assertion and self-reliance, high self-control, and low social stratification. Berry and Annis see these composite differences in terms of “cognitive style,” “affective style,” and “perceptual style.”<sup>7</sup> Robert Edgerton found distinct personality differences between farmers and pastoralists.<sup>8</sup> This difference includes perceptual habits and religious beliefs. (See Table 1.)

Although the aftermath of the agrarian way of life was filled with toil and scarcity, the earliest agriculture may have been a halcyon time for those who continued the older traditions of their hunter/gatherer ancestors and lived socially cohesive, small-group-centered lives. The process of transformation that propelled foragers into an agrarian way of life is worth revisiting. At that time of transition, soils were fertile and kept animals and plants still interbred with wild forms, adapting them to local environments and resistance to diseases—a resistance that the later, highly bred varieties and breeds would never have. This gene flow back and forth to the wild population can be seen today in the reindeer herds among Siberian, Eskimo, and Lapp peoples.<sup>9</sup>

In hoe or subsistence agriculture we usually find a greater diversity of plants, a polycultural system with small-scale mixed planting, and fewer specialized crops than with advanced agriculture. According to David Harris, the transition to the specialized systems from more general agriculture required not only genetic engineering but stratified societies.<sup>10</sup>

This life, new to humankind, was a less interesting and challenging and more tedious way of life and required a “special mentality,” according to paleontologist Wolfe Herre, “in order to accept the loss of freedom of a hunter’s life.”<sup>11</sup> This last statement may qualify as the great understatement of a century of prehistoricism.

Early in agricultural history, easygoing, subsistence societies made minimal introduction of domestic plants and animals, at the same time consciously resisting life in denser structures. Once villages were established,

TABLE 1. FARMERS VS. PASTORALISTS

Farmers	Pastoralists	
orientation	soil cycle	sky power
sexual politics	matriarchal	patriarchal
animal symbol	snake	bird
commensal animal	ox	horse
funerary practice	burial	barrow graves
sacred terrain	springs, caves, etc.	mountain, sun
deities	polytheistic	polytheistic/monotheistic
chief deity	goddess	god
ultimate place	this world	the otherworld
source of help	local deities messiah	messiah

pollution	organic and relative	puritanical
other life forms	subordinate	metonymic
conflict	defensive	expansive
mystery	earth's generation	the mind of god
authority	hatred of	respect for

however, men began to fight over “the means of reproduction” and departed from the “modesty and conviviality” found in family-level societies. As populations of villages increased, geographical circumscription (expansion limited by mountains, desert, or sea) seemed to close around them, leaving nowhere to go, and more bullying, impulsive aggression, revenge, and territoriality took place. Scarcity of key resources and war became a threat to the daily lives of these horticulturists and animal raisers.

As that economy changed (destroyed as a free and peaceful enterprise), the people found themselves in interdependent social groups where, because of the growth of the political economy they were forced into competition, warfare, and the necessity of defense against other groups.

In a stratified society people are divided into classes where individual freedom is limited. Wholeness and integration diminish because of the social effects of isolation and specialized roles. Of the Neolithic period that started about four thousand years after agricultural practices began, Wilhelm Dupre says: “The individual no longer stands as a whole vis-à-vis the life-community in the sense that the latter finds its realization through a total integration of the individual—as is the case by and large in gathering and hunting economies—but becomes part of the social structure in the function and role he selects or is selected for. It is a process in which natural alienation due to the psychological make-up of man assumes lasting forms.”<sup>12</sup> The endogamous, secret, competitive nature of seed and root-keeping created the kind of Neolithic High Culture that preceded civilization—a fight and defense-mindedness that emphasized cultural differences. This attitude was promulgated by intensified tribal initiation that generated tribal ideology and converted clan members into warriors.<sup>13</sup>

WHILE THE EARLY NEOLITHIC with its small-scale community and rich environments may have been among the best of times, most agriculture of the past five millennia has not been kindly. The theocratic agricultural states, from the earliest centralized forms in ancient Sumer, have enslaved rather than liberated. Even where the small scale seems to prevail, plenty and conviviality are not typical in Bronze Age, medieval, or modern peasant life with its drudgery, meanness, and suffering at the hands of upper classes; the vulnerabilities of the crop because of inbred weaknesses and resulting malnutrition of people make life even harder. The schizoid nature of agriculture can be seen in its paradoxical combination of tedium and relief in numerous violent festivals or carnivals.

Among archaic states that formed as villages joined forces, vassalage and standing armies make their appearance. Surrounded by people, the individual lost freedom, movement, and role. Johnson and Earle describe what happens as a nation matures into an agrarian state and has to deal with disagreements between households ensuing from distances in wealth and prestige. They often live so close to the margin of survival that they visibly lose weight in the months before harvest. As we approach the agrarian state, peasant subsistence provides a poor diet, undernourishment, extreme competition, and meager security as markets are controlled from the outside.<sup>14</sup> The record is one of endless rounds of population increase and dependence on “starchy staples.”

The emergence of the controlling state was the result of social as well as technological change. Lynn White, the historian, has shown the association between the rise of agriculture and the “control” of nature. Plant monocultures were developed through the use of wind and water for turning wheels for complex irrigation projects and the forced labor needed to keep them going. White calls attention to the importance of the replacement of the ox by the horse in the eighth century and the profound change in efficiency and productivity created by the horseshoe and horse collar. As the horse made working the farther fields possible, a switch to “assarting,” a three-step field system of clearing, draining, and diking, created landscapes that have characterized Europe for the past thousand years.<sup>15</sup> Primitive planters—autonomous subsistence farmers or gardenerhorticulturists—share much of the forager’s reverence for the natural community and the satisfactions of light schedules, hands-on routines, and sensitivity to seasonal cycles. But with the advent of the ox and the plow, irrigation, engineering, the prison of seasonal rounds, and the horse as cavalry, it all changed. Autonomy vanished. The landlord became a warden, the yeoman a serf, a peon, a tool of the system. Women’s work increased more than men’s in both time and difficulty, and more of them went to live with their husband’s people than was the practice in hunting/gathering societies in which about 65 percent of the residences of the newly married were with the wife’s family.

HOW DO PLANTERS and animal keepers view their place on earth, in the universe, and in relationship to other creatures? What is the cosmic vision of the agrarian state? Joseph Campbell regards sacrifice as the planter's central rite where grain crops are the metaphor of the soul. The liturgical offering of fruit, grain, or the ritual slaughter of an animal or person is a symbolic means of participating in the great round, a rite of renewal or greasing the wheel. Our ties to the seeds of cultivated grain, Campbell claims, somehow imparted the idea of survival beyond death. Ceremonially, this idea is given expression by sacrifice.

Campbell has given us a deeply moving description of worldwide ceremonial practices among civilized and agrarian peoples, including those at the heart of Buddhism, Islam, and Christendom.<sup>16</sup> Yet, all the theatrical activity of his book amounts to page after page of bloody violence. It documents the underlying murderous and suicidal character that became common in these cultures. The immolation of the god is the central theme of Christianity, a self-sacrifice to redeem the believer's soul. Christianity's hostility to nature was celebrated in its asceticism, an orientation common to other religions as well.

What "is the game of the gods?" asks Octavio Paz, speaking of the Aztecs. Geographies are symbolic and landscape is historical, says Paz, and we turn them into geometric archetypes, such as the pyramid, "the metaphor of the world as a mountain." The "playing field" of the gods is the pyramid, "the religious-political archetype" with its platform sanctuary and symbolism of hierarchy. "They play with time," he says, "and their game is the creation and destruction of the worlds." It was a bloody game where prisoners were sacrificed, a game where a solar cult demanded that the gods be fed blood to keep the universe operating, just as the sun "daily is born, fights, dies, and is reborn."<sup>17</sup>

The "game" we humans play on earth may be regarded as finite or infinite, a contest in which the loser is destroyed or the winning is always temporary.<sup>18</sup> Is the "game" the animals hunted by foragers? Or is it, alternatively, a contest with rules and sides? Or is it both? The philosophy of the hunt tells us that games are infinite. Life goes on and nature provides the essential structure in a rule-regulated cosmos. The ecology and behavior of the "game" animals become the metaphorical model of human society, the rules of one's own biological being, and the world's working or playing. Winning and losing are transient phenomena—some small part of the whole. Opponents are essential. One loves one's enemies. To destroy them in any final sense is unthinkable.

Somehow that sense of perpetual play and the brotherhood of endless but leisurely opposition has faded with our primal ancestors, its place taken by the need for complete victory, a final solution. The authoritarian decree, reiterated again and again, has been the death of the others, the defeat of nature, of germs, of wolves. It is all the same, an obsession with total supremacy, as though the objective were to obliterate all defeated foes, all pests, all disease, all opponents, all the Others. To end the game. Sacrifice does accommodate the "problem of death," as Campbell claims, but it does so merely by domesticating death. Sacrifice reverses the hunter/gather idea of gifting in which humans are guests in life who receive according to their due; in its stead it substitutes offerings as a kind of barter with blood as currency. Agriculture—domestic crops, for example—is characterized by glorious abundance or desperation. Harmony with the world is reckoned in terms of mastery over parasites and animal competitors by enlarging the scope of the simplification of ecosystems and, ceremonially, by sacrificial rites of negotiation with gods with human faces. Ostensibly a participation with the cosmos, the sacrificial ceremony is only a thinly disguised bribe.

In this "New Age" in search of messianic solutions to modern problems and the recovery of a lost world, we have uncritically embraced the shaman as visionary, medicine man, guru, ecologist, cosmologist, and wise man or woman and accepted the model of shamanistic thinking as ecological and nature-friendly. Spontaneous healers, usually women, have always accompanied humans. But the shaman is a latecomer—part of the agricultural fear of curses and evil spirits, the use of intoxicants, the spread of male social dominance, the exploitation of domestic animals (especially the horse) as human helpers, and the shift of sedentary peoples toward spectatorship rather than egalitarian participation.

Among foraging peoples, healers appeared spontaneously and did not necessarily hold other powers, sponsor séances, go on vision quests, do magic tricks, or wield political influence—all of which were true of the later shaman. Esther Jacobson, a scholar on Scytho-Siberian cultures, has shown how shamanism emerged as a late expression of what separates us from nature and marked the decline of the great cults of the bear and the mountain. The veneration of terrain features—lake, cliff, river, mountain, and cave—that attached people spiritually to place reflects "archaic traditions which go back before shamanism," which became a male-dominated political practice. Also lost were "contrasting relationships of bear/woman and bear/man" that carried "totemic understanding of tribal origins."<sup>19</sup>

The shift away from affirmation and participation in palingenesis—the round of life—to an attempt to control it can be seen in the deterioration of the ceremony of the slain bear as it was influenced by the outreaches of agrarian thought. In primal form the festival was an egalitarian, ad hoc, celebration of the wild kill as a symbolic acceptance of the gift of food. Modern tribal ceremonies of the bear cult have all but disappeared or have been altered, as in the Gilyak and Ainu of East Asia who kill a reared bear, scheduling the death of an animal under human control—surely not a hunt.<sup>20</sup> The ancient ceremony degenerated to a shaman-centered spectacle of the sacrifice of a captive bear, deflecting evil from the village.<sup>21</sup> The animal cannot be the focus of veneration and the object of sacrifice at the same time.

THE TRANSFORMATION of the ecosystem of hunter/gatherers to the controlled monocultures of agrarian communities was accompanied not only by a change in cosmic view, but by the social and political zeitgeist as well. As agriculture became more complex, the importance of kin connections was subverted by politics, spiritual connections to the landscape were disrupted, and ecological relations to the land and animals were forgotten.

The agrarian community of domestication reduced the life forms of interest to a few score species, mirroring the situation in which the farmers saw themselves dependent on deities with humanlike, often perverse, and unpredictable actions. Their cosmos was controlled by beings more or less like themselves, from local bureaucrats up through greedy princes to jealous gods. No wonder agrarian cultures preferred games of strategy and folktales (rather than the foragers' myths and games of chance) in which the petty tyrants, portrayed as animal burlesques of their various human persecutors, were outwitted by clever foxes like themselves.

In time farmwork became harder and more routine and organization more elaborate. "Headman" and "big man" politics emerged in which some men ruled and others obeyed. "Defensive needs" became a major concern, according to Allen Johnson and Timothy Earle, for offenses committed by the other big men and their followers, clans, and armies in the next village or state. As resources diminished and the land was denuded and eroded, there was a surge in extractive and storage technology, along with self-serving rhetoric and hierarchic ceremony by those in power. The rise of centralized authority—monarchies, clerical hierarchies, bureaucracies, trade networks, military units—was the heritage of agriculture, beginning with storable crops, distributional networks, bookkeeping, currency, territorial protection, and war.<sup>22</sup> Murray Bookchin describes this hunger for central authority as "a mania for domination that created mythic 'needs' and systems of control so harmful to the communities they were pledged to service that they and their legacy of waste, destruction and cruelty now threaten the very existence of society and its natural fundament. Indeed, the domination of nature was to have its roots in the domination of human by human."<sup>23</sup>

The transition from a relatively free, diverse, gentle subsistence to suppressed peasantry yoked to a metropolis is a matter of record. Today's urban gardeners and neo-subsistence people clearly long for genuine contact with the nonhuman world of nature, independence from the market, and the basic satisfaction of a livelihood gained by their own hands. But the side-effects of agriculture cursed the planter from the beginning. Faced with forced farming, Chief Washakie of the Shoshones said, "God damn a potato." Sooner or later you get just what the Irish got after they thought they had rediscovered Eden in a spud. Domination follows competition. A Jeffersonian image of agrarian independence may have motivated Liberty Hyde Bailey to write his turn-of-the-century book, *The Holy Earth*. Bailey says: "Man now begins to measure himself against nature also, and he begins to see that herein shall lie his greatest conquests beyond himself. . . . The most virile and upstanding qualities can find expression in the conquest of the earth. In the contest with the planet every man may feel himself grow."<sup>24</sup> Then he patronizes the nature lovers. "I hope that we may always say 'The Forest Primeval.' I hope that some reaches of the sea may never be sailed, that some swamps may never be drained, that some mountain peaks may never be scaled, that some forests may never be harvested."<sup>25</sup> His solution to the destruction of the forest is the agrarian solution: walls, enclaves as parks and Indian reservations, a world separated into some tokens of nature and, outside the enclosures, the real, practical world of heroic engineering. As for the fences between farmers, they betoken more rancor than peace. Since farmers cannot move away from unpleasant neighbors as easily as hunter/gatherers, they exercise conflicts in other ways—by laws and courts, for instance. They reluctantly submit to authority, more often settling into lifelong mutual hostility to both neighbor and authority. Robert Frost's poetic notion that "good fences make good neighbors" does not mean that fences increase the sum of mutual goodwill within the community, certainly not the inclination to share, but rather that walls inscribe with finality the power of ownership and exclusion, reducing trespass and potential friction.

The enclave confines or excludes things so that those on both sides can proceed with an insulated life. Its model is the walled garden: the wild things are kept out rather than in. Zoos, to keep wild things in, having

been prisonlike, are beginning to become gardens with animals. But no such enclaves can maintain sufficient populations to sustain the genetic diversity of a wild population. The inmates do not belong to the actual ecosystems of the world biosphere but to a kind of halfway house just short of domestication. While enclaves may serve as emergency measures, they encourage us to believe in a world divided. It is the mentality of the dragon—the monster who sits under the mountain guarding his pile of gold and his virgins. Or it is the chessboard—take my square (if you can), capture my pawns, deal with my powers.

To moderns, agonizingly bereft of ceremonial life, the village beckons with an irresistible nostalgia. City people have always idealized the country. The Greek pastoral poets, Roman bucolic esthetes, and later European rustic artists fostered rural fantasies among educated urban dwellers.

Its images of a happy yeomanry and peaceful countryside were therapeutic to the abrasions of city life. As art this agrarian impulse produced a kind of spurious, parklike ecology, the vegetable world as a better metaphor.

From the outside the life of the peasant or the villagers of hoe agriculture seems spangled with celebration. The calendar of folk festivals that are now part of the stock in trade of tourism, the color photographs of parades, dances, feast days, carnivals, and religious holidays, seem without end to readers of the geographical magazines who have themselves lost so much of community life and communal commitment. Primal foraging is widely looked upon as monotonous and dull. By contrast the numerous festivals in Third World villages and the heterogeneity of urban life seem infinitely lustrous and desirable.

Only lately has an esthetic developed around farming in the folk poetry and painting of the eighteenth century—the sentimental image of the straw-hatted, barefoot bumpkin wandering blissfully among his pigs or hoeing his radishes in the soft glow of the setting sun. We may ask whether there are not such stereotypes in the recent books of such advocates of the farm, the claim of stewardship, and the natural satisfactions of farm life. Farming seeks its benign figure not in a pictorial esthetic but in a social morality. Wendell Berry, for example, makes the garden and barnyard equivalent to a spiritual esthetics and relates it to monotheism and sexual monogamy, as though conjugal loyalty, husbandry, and a metaphysical principle were all one. And he is right. Archaic peoples, like most modern primitives, probably viewed the earth as mother and nature as feminine. But with the advent of agriculture the identification of woman with fertile land, as a fecund mother goddess, took on added significance. She became the symbol of productivity and access to the hidden powers of the earth, an image that has gone against women ever since.

Around the world as the subsistence base eroded, forests vanished, and water alternated from flood to drought, the attitude among both farmers and herders toward Mother Earth changed from worshipful to idealized. The ambivalent attitude toward earth, mother, and woman was translated into a fanaticism about virginity that made women pawns in games of power and under the control of men as the touchstone of honor and vengeance. It also reflected a deeper sense of alienation from the underlying maternal powers of the earth.<sup>26</sup>

For hunter/gatherers the living metaphor of cosmic power is other species; for farmers it is the mother; for pastoralists, the father. For urban peoples it has become the machine. But the mother and the machine have merged in the mind of commerce and the growth economy of the corporate world, a final degradation to which feminists have not been insensitive.<sup>27</sup>

Hunters and gatherers of both genders had lived in a somewhat jocular state of conflict in small-group societies—a sort of bandying of words in an egalitarian world. As we have seen, agriculture lent itself to imagining gods in the image of humankind who controlled humans as they controlled domesticated nature and as men controlled women. From the beginning, men have probably always suspected that women knew something that they did not. But it was not threatening until the phenomena of rot, disease, fungus, and spoilage came with crops, and, finding no simple explanation of this turn of bad luck, they pinned it on witching women. As larger human settlements became stratified, male and female tumbled into life as opponents. Their icons—as, for example, represented by Greek gods and goddesses—became competitive with each other for power.

The Earth Mother was probably more important and more durable in the root and perennial plant societies of Asia where water was of primary importance. E. O. James, who wrote *The Worship of the Sky-God*, tells of the road taken by the grain-growers tending annual plants: “In arid regions and in oases on the fringes of deserts where water was the most urgent need, particularly with the rise of agricultural civilization, it was to the celestial powers who controlled the elements that resort was made . . . for the life-giving rain or inundation. . . . In almost every ancient pantheon from the Neolithic onwards the figure of the sky god recurred, primarily concerned with the weather and the atmosphere. . . . He was regarded as all-powerful and all-seeing, and readily became a Weathergod.”<sup>28</sup> Like bad money driving out the good in an economic system, patriarchal monotheism emptied the temples of the Goddess.

A marked change in attitudes toward death took place as the agrarian life took over. The Incarnation, the

embodiment of God in the human form, is a central tenet of the “great world religions.” Yet death has been constantly revised into the form of “everlasting life” in order to refine it and deny the corruption of the organic body that is part of the natural processes upon earth. The funerary preservation of body and mortuary architecture of stone are its final statement. The Hindus have exceeded the West in “a repudiation of the ‘gross’ material body.”<sup>29</sup> Cremation renounces a sensuous and bodily world by a symbolic escape from the organic aspects of the cyclic flow of elements. “I will not be eaten!” is the last desperate cry.

Joseph Campbell says that “in the planting societies a new insight or solution was opened by the lesson of the plant world itself, which is linked somehow to the moon, which also dies and is resurrected and moreover influences, in some mysterious way still unknown, the lunar cycle of the womb.”<sup>30</sup> The planters did obsess over fecundity, perpetual crops, and the pregnancy of their women. But according to the archaeologist Alexander Marshack, lunar periodicity had long been studied by hunters, who made calendrical marks with notations on carved bone and antler. Campbell theorizes that the ritually preserved bones of animals killed by hunters spring magically into a new animal of the same kind—“the undestroyed base from which the same individual that was there before becomes magically reconstructed.” Among planters, by contrast, he says that the bone disintegrates and will then with the help of the group of farmers “germinate into something else. . . . The planter’s view is based on a sense of group participation; the hunter’s, on that sense of an immortal inhabitant within the individual which is announced in every mystical tradition. . . . The two have yielded radically contrary views of the destiny and righteousness of man on earth.”<sup>31</sup> The planter’s “group participation” implies subordination in a chiefdom and a transcendent or escapist spirit, while the private and unique soul of the hunter and that of his prey are seen to persist.

People who deal with natural death daily and directly do not deny and hide it; nor are they likely to become coarsened by it unless it becomes commercialized. The interdependence of life, however, is likely to be obscure to those who turn the killing of food animals over to specialists who practice in secret. Those who fear death become politically and socially conservative and less tolerant of other species, other creeds, and any deviation from their own mode of life.<sup>32</sup>

The structure of pagan ceremony was altered as the human community became sedentary and as agriculture coalesced political entities into ever larger domains. Among hunting/gathering groups or hamlet and village peoples, ceremony, dance, and other rituals, were based on myths and metaphors that signified gratitude toward the whole living world and participation with other species in the round of life. In “Big Chief ” societies, however, the purpose of ceremonial dress, appurtenances, and performances affirmed levels of subordination and displayed the order of political rank. The symbolic center of ceremony shifted from an encounter with otherness in its many polytheistic forms to human social hierarchy and its humanized gods—one more step toward the mirror world of Narcissus in which humans replace an elegant comity of beings by despiritualizing nonhuman beings and using their skins and feathers as power symbols.

THE CONSEQUENCES TO SOCIAL, emotional, and physical well-being as people are forced from hunting/gathering into agriculture are far-reaching. As omnivores, humans are characterized by a diet of “an enormous variety of foods,” depending on seasons and availability as well as preferences. But “with the advent of the ‘Agricultural Revolution’ . . . there was less time for hunting and gathering, and the need to specialize on the cultivation of the most productive crops resulted in a simplification of the diet. . . . It is known that with reduced food choices, infant health is threatened because proper weaning becomes difficult and there is a consequent risk of malnutrition”—the main medical problem in the children of subsistence farmers in Africa, Asia, and South and Central America.<sup>33</sup> Says James V. Neel, “The advent of civilization dealt a blow to man’s health from which he is only now recovering.”<sup>34</sup> Among the human diseases directly attributable to our sedentary lives in villages and cities are heart and vascular disorders, diabetes, stroke, emphysema, hypertension, and cirrhoses of the liver, which together cause 75 percent of the deaths in the industrialized nations. S. Boyd Eaton, an M.D. and professor of anthropology, and Marjorie Shostak, a respected researcher in anthropology and author of *Nisa: The Life and Words of a !Kung Woman*, comment: “The difference between our diet and that of our hunter-gatherer forebears may hold keys to many of our current health problems. . . . If there is a diet natural to our human makeup, one to which our genes are still best suited, this is it.”<sup>35</sup>

Because of the overuse of salt, dairy products, sugar, and even crops like maize with its increased tooth wear and dental caries, our teeth are worse than those of primitive foragers, as are our bones, joints, and muscles. Many of our diseases we assume erroneously to be inevitable with age. We have more osteoporosis, lung diseases, and deafness than ever. Although the average height of all Americans increased several inches between the mid-1800s and the present, due to increased caloric and protein intake and improved health in childhood, “we have not quite reached



the height of Cro-Magnon hunters and gatherers living 25,000 years ago.”<sup>36</sup> There is a lower mean age at death, as well, and more anemia.

Epidemic diarrhea is largely a marker of sedentary people everywhere.<sup>37</sup> Domestic animals are the reservoir for many human parasites, especially viruses. During the past few thousand years they have endlessly generated mutant or recombinant forms that attack people with strains of encephalitis, measles, diphtheria; epidemics of highly infectious diseases known as plagues; and numerous multicellular parasites. Because of agricultural land use, malaria has become a major cause of human death. Archaeological records show that the Neolithic was marked by “a decline in dietary quality” due to a lack of “availability of quality protein . . . and an increase in the consumption of starchy plant foods. Lowering of the protein-to-carbohydrate ratio “increases serotonin levels and induces a ‘craving’ for protein.” This explains the “meat craving that is reported among so many hunting-horticultural peoples today.”<sup>38</sup> The fat in beef and pigs is notoriously bad for health because the intramuscular saturated fat (marbling in steaks), characteristic of grain-fed cattle, is “an artificial product of domestication” that is lacking in wild animals. Seal, whale, and walrus fat, widely eaten by foragers in the Arctic, is unsaturated. Polyunsaturated fat, linoleic acid, is not synthesized by the body and is essential to good health. It is found in vegetable fats, nuts, seeds, insects, amphibians, birds, snakes, and other reptiles. It is low in ruminants such as domestic beef.<sup>39</sup> Long-chain fatty acids, found in greater abundance in wild meat, are necessary for brain development. These come from structural rather than adipose fat. You can get them in meat from the butcher, but domestic cattle often lack access to an adequate variety of seeds and leaves to make an optimum proportion of structural fats.<sup>40</sup>

Neither domestic cereals nor milk from hoofed animals is “natural” food in an evolutionary or physiological sense. We are subject to epidemics of immune reaction, cholesterol susceptibility, and the dietary complications that arise from too much or too little milling of grains. The human difficulty digesting cow’s milk is mainly because of the adult insufficiency of lactase, the digestive enzyme for milk, a deficiency that runs about 50 percent among blacks, 30 percent among whites, 70 percent among Chinese, and 24 percent among East Indians.<sup>41</sup> Vegetarians disdain the arrogance of piggish meat-eaters and the health hazards of additive-laden meats, but the vegetarian alternatives subject them to a kind of nutritional brinkmanship. They must get eight of the twenty amino acids that their own bodies cannot make, all contained in meat in optimum amounts. None are stored, and the lack of one impairs the utilization of them all. The alternative plant sources are cereals and legumes, the first low in lysine, the second in methionine, so that people with little or no meat must get combinations of legumes and grain (lentils and rice, rice and beans, corn and beans) and must locate a substitute source for vitamin B-12.

“No exclusively vegetarian society has ever been discovered,” says H. Leon Abrams. Of 383 different cultures, all eat animal proteins and fats, and “esteem them highly.”<sup>42</sup> C. H. Brown observes that “small-scale agriculture supports population densities many times greater than those permitted by a hunting and gathering way of life. . . . However, a liability . . . is that crops are susceptible to periodic failure. On the other hand, the food supply of foragers consists of wild plants and animals that are naturally resistant to drought and disease, so that these organisms rarely, if ever, ‘fail.’”<sup>43</sup>

Vegetarianism ignores human omnivory both in physiology and in food preferences. Food takes longer to pass through the gut in herbivores because of the slow digestion of cellulose-rich and fibrous foods. Like the gorillas, one of our Australopithecene cousins went the way of barrelbellied herbivory. The small intestine is shorter in carnivores. In humans it is about half the length between gorillas and lions—the pure vegetarians and the pure carnivores—with digestive enzymes to match.

Except for a few leaf-eating colobine monkeys, the higher primates are nearly all omnivorous and have been so throughout their history. Onethird of their diet is vertebrate meat, crustaceans, eggs, and a range of invertebrates. The dicotyledon eaters—omnivores originally of the forest, like us, who like salads too, have short intestine-to-body ratios. Savanna grazers depend largely on the vegetative path beginning with monocotyledons, which have more fibrous and lignified substances. Such plants are the principal forage of the ungulate grazers and browsers, which have a complex, symbiotic gut flora lacking in humans. Cereal grains are part of the monocot system. Had our hominid ancestors not played in the wider game of the hunt, adding meat rather than tough herbage, we might have wound up with bodies like gorillas, browsing placidly and almost continually. Vegetarianism, like creationism, simply reinvents human biology to suit an ideology.

Except for a tiny minority, people everywhere, including farmers, prefer to eat meat. Anthropologist Marvin Harris says: “Despite recent findings which link the over consumption of animal fats and cholesterol to degenerative diseases in affluent societies, animal foods are more critical for sound nutrition than plant foods.”<sup>44</sup> Among most tribal peoples meat comprises less than 50 percent of the total diet; the bulk is made up of a wide variety of fruits, nuts, roots, and vegetables. But meat is always the “relish” that makes the meal worthwhile, and close attention is

always paid to the way meat is butchered and shared. In virtually all small-scale societies, meat and hunting take precedence over plant food and gathering/growing. Perhaps there is an innate bodily wisdom about nutrition, but the immediate reason for the prestige of meat is because animals are believed to be sentient and spiritual beings like ourselves.<sup>45</sup>

Although traditional sharing of meat as well as gathered food is based on widely differing social criteria, such as lines of kinship or other obligations, not gender lines, some writers attach meat-eating to patriarchy.

Though all sorts of arguments are presented to support this position, there is no evidence that “patriarchal” societies eat more meat than other societies, that soldiers eat any more meat than farmers, that hunters in hunter/gatherer societies (in which men usually do the hunting of large game), eat more meat, pound for pound of body weight, than the women. Women and men in all kinds of societies and circumstances prefer meat.

SPECIALIZED FARMERS have always been basic adjuncts to large societies and hence, are linked by psychological as well as economic ties to urban dwellers. The agrarian mode was (and is) unstable. City anxieties about food are therefore independent of city control. “Sooner or later,” observes Robert Allen, “increasing population and demands on land resources led to subdivision and fragmentation and relapse toward bare subsistence economy . . . checked by the reorganization of agriculture on an estate or feudal basis with the inevitable consequences of serfdom and slavery . . . which, unless placated with ‘bread and circuses,’ represented a continual menace to the ruling classes and the security of the state.”<sup>46</sup>

The fantasy of agriculture as bucolic is the city person’s fiction, who sees nothing of the resentments, the drudgery, or the intellectual vacuum. Perhaps it should be called “the wooden shoe delusion”—that cute object sold in gift stores which conjures up the clean little Dutch boy with his finger in the dike, beautiful fat cows in the background, while in reality the wooden shoe was the precursor to the rubber boot, worn by those who had to walk about in wet manure. Economists have their own pipe dream. Douglas C. North and Robert Paul Thomas see agriculture as man’s “major breakthrough in his ascent from savagery to modern civilization” leading to individualized property rights and improved labor efficiency.<sup>47</sup> Like others they seem unable to get past the notion that maximized productivity is the ultimate good. The historian’s assumption that farming favored more security, longer life and greater productivity has been challenged by a student of foragers, Marek Zvelebil, who says that “when the reassessment [of postglacial hunting and gathering] is complete, foraging in postglacial forests will be considered a development parallel with agriculture and one that, for a time at least, was equally viable as a form of subsistence.”<sup>48</sup> The rural countryside seems a wonderful escape both from nature and from the city.

The first sentence in the preface to an anthology on domestication by Ucko and Dimbleby begins: “The domestication of plants and animals was one of the greatest steps forward taken by mankind.”<sup>49</sup> After all, the idyll of the family farm, the Jeffersonian yeoman, the mental and spiritual relief of a rural existence is a heritage of civilization. It seems to have what hunting/gathering does not: retrievability. The agrarian life is only a generation or two away—indeed, only a few miles away in bits of countryside in Europe and America. After all, it may incorporate some hunting and gathering, as though creating the best of all possible worlds. Such a gardenlike, subsistence-oriented horticulture shades almost imperceptibly from a foraging life. At this boundary farming was probably once relatively benign, a satisfactory way of being human without the colossal destructiveness to which “modern” agriculture and its urban doppelgänger have led us.<sup>50</sup>

Even so, if there is a single complex of events responsible for the deterioration of human health and ecology, agricultural civilization is it. At its worst, agriculture is industrial and corporate, poisoning the whole planet with chemical compounds not found in nature. It has made plants and animals into what geneticist Helen Spurway calls “goofies,” the deformed animals whose wild genetic homeostasis has been destroyed.<sup>51</sup> Notes

4. Inherited pairs of chromosomes that are different in their genetic makeup (heterozygous) provide the organism with a wider range of characteristics for responding to environmental circumstances and changes. Whereas this is more apt to be the case among wild populations of animals and normal human populations where breeding is not controlled, the chromosomal pairs in domestic animals that are inbred are more likely to have the same genetic constitution (homozygous) and thus have less genetic variability and ability to adapt to environmental changes.

36. This evidence of our physical disability is taken directly from S. Boyd Eaton, Marjorie Shostak, and Melvin Konner, *The Paleolithic Prescription: A Program of Diet & Exercise and a Design for Living* (New York: Harper & Row, 1988), p. 95. I am grateful for their statistics. Their book has every reason to hold forth with bold imagination, but it is a timid thing, unable to pursue its own logic, and unwilling to *say* that the life of our primitive forebears and contemporaries have and had a better life than we. It is the curse, I suppose, of scientists' reluctance to advocate anything.

41. According to geographer Frederick J. Simoons, malabsorption of lactose is due to an insufficiency of the digestive enzyme lactase that "hydrolyzes the lactose of milk into glucose and galactose, which can be readily absorbed." Although most animals experience a drop in the production of lactase after weaning, some individuals in human populations continue to be high lactase producers and lactose absorbers as adults. Simoons hypothesizes that high lactose absorption might have been a selective survival factor among populations experiencing inadequate amounts of other proteins and nutrients where milk from kept animals was readily available. These individuals "would be better nourished and healthier . . . and better able to protect and provide for" their families. See Frederick J. Simoons, "The Determinants of Dairying and Milk Use in the Old World: Ecological, Physiological, and Cultural," in J. R. K. Robson, ed., *Food, Ecology, and Culture: Readings in the Anthropology of Dietary Practices* (New York: Gordon & Breach, 1980), pp. 83–91.

50. Among those who see in garden agriculture not only a worthwhile existence but a more practical solution to the difficulty of arranging our individual lives (rather than talking about hunting and gathering) are three American writer-farmers whom I admire enormously. They are Gary Snyder, the poet in the Sierra Nevada of California, who speaks so eloquently of the ties with the earth gained in place with the work of one's own hands; Wes Jackson, whose genius has flowered at his Land Institute in the prairies of central Kansas for shifting crops away from cultivation, from the use of chemical fertilizers and pesticides, and omitting overbred crop varieties; and Wendell Berry, the poet-farmer on his land in Kentucky, celebrating the best synthesis of nature and culture in the performance of such independence and virtues that subsistence fosters. I have repeatedly inveighed against all three for not pushing the thesis of an undiluted model of primal life to its conclusion. But of course I have known all along that there is no way, literally, for many people to achieve that final recovery of our truest being: to live wholly an authentic Pleistocene existence. And I know that simple farming with the protection of the immediate habitat is still possible for thousands of people—indeed, for millions, even in cities—if we can drive the corporate interests off the land. In the next-to-best of all possible worlds, I would welcome a triune of Berry, Jackson, and Snyder, empowered to take charge of the use of the continent, because I know that in spite of their grasses, legumes, or even potatoes that the wild world would survive in peace around them. May their Neolithic consciousness prosper—and prevail.

I have criticized them all, but I confess to a kind of in-house bickering. The quality of life that they themselves live, as nearly as one can see it from the outside, is superb. If the world could be put in their hands it would recover much of the best of the precivilized world of the Pleistocene. The bones I have to pick with them are surely those remaining from a shared hunt and meal—pieces to be mulled over (to mull, from a root word meaning "to grind" or "to pulverize"), which I take to mean that we are sitting at a fire together, breaking the femurs of deer to get at the marrow of things.

Snyder has said that the intent of American Indian spiritual practice is not cosmopolitan.

"Its content perhaps is universal, but you must be a Hopi to follow the Hopi way." This is a dictum that all of us in the rag-tag tribe of the 'Wannabes' should remember. And he has said: "Otherworldly philosophies end up doing more damage to the planet (and human psyches) than the existential conditions they seek to transcend." But he also refers to Jainism and Buddhism as models, putting his hand into the cosmopolitan fire, for surely these are two of those great, placeless, portable, world religions whose ultimate concerns are not just universal but otherworldly. Yet from what I have seen of his personal life, there is no contradiction. I suspect that Snyder, like Berry and Jackson, is not so much following tradition as doing what Joseph Campbell called "creative mythology."

## NOTES

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49. Ucko and Dimbleby, *The Domestication and Exploitation of Plants and Animals*, p. ix.
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